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**Thin film igniter for pyrotechnic material especially of  
 airbag - has fuse bridge layer of hydrided hafnium and-or titanium**

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Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
WO 9854535	A1	19981203	WO 98EP3009	A	19980522	199904 B
DE 19721929	C1	19990128	DE 1021929	A	19970526	199908
DE 19732380	A1	19990211	DE 1032380	A	19970725	199912
EP 914587	A1	19990512	EP 98929356	A	19980522	199923
			WO 98EP3009	A	19980522	

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Abstract (Basic): WO 9854535 A

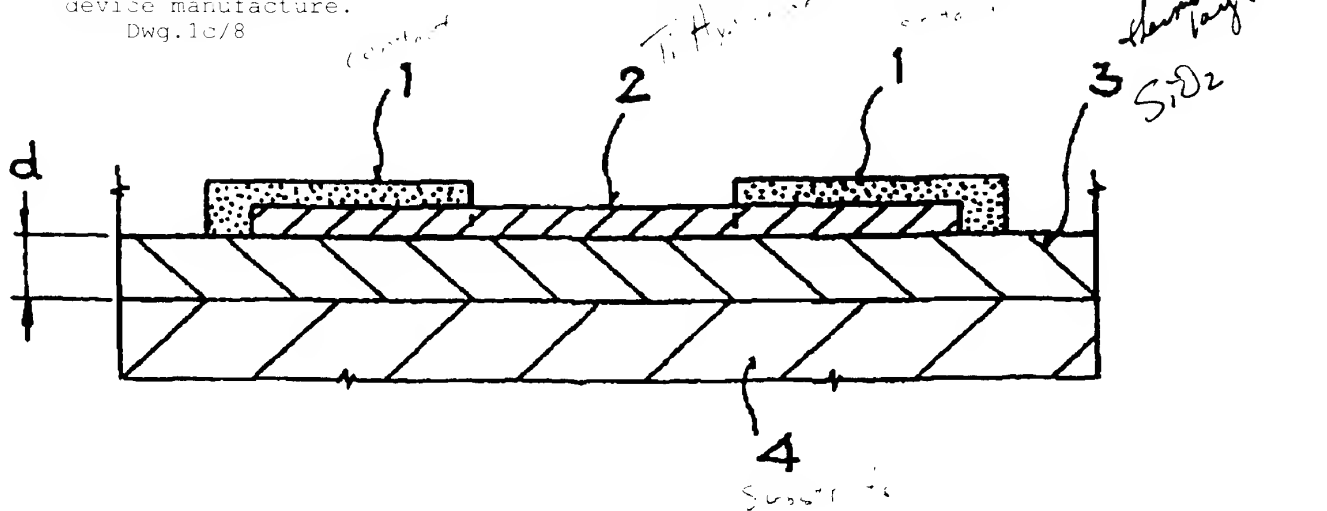
A thin film igniter element for pyrotechnic active materials consists of a substrate (4) bearing two electric contacts (1) connected together by a chemically and thermally active fuse bridge layer (2) which consists of a hydrided hafnium and/or titanium layer and which is preferably initiated by a plasma discharge. Preferably, the fuse bridge layer (2) consists of hafnium-free TiH<sub>x</sub> (x = 0.5 to 2.0), titanium-free HfH<sub>x</sub> (x = 0.025 to 2.0) or a hydrided hafnium-titanium mixture. Also claimed is production of the above thin film igniter element by (a) depositing and structuring a hafnium and/or titanium layer in accordance with the geometry of the fuse bridge layer (2) and the contacts (1); and (b) hydriding the layer preferably at about 350 deg. C.

USE - As an igniter for occupant safety devices, especially vehicle airbags.

ADVANTAGE - The igniter is capable of low energy initiation (a few mJ at an applied voltage of less than 50 V) so that it can be initiated by an automobile battery without the need for expensive voltage amplifiers, provides rapid ignition (in the millisecond range) of the pyrotechnic active material with extremely low efficiency losses and is

simple to mass produce by a process compatible with semiconductor device manufacture.

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Title Terms: THIN; FILM; IGNITE; PYROTECHNIC; MATERIAL; AIRBAG; FUSE; BRIDGE; LAYER; HYDRIDED; HAFNIUM; TITANIUM

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Manual Codes (EPI/S-X): X22-J07

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